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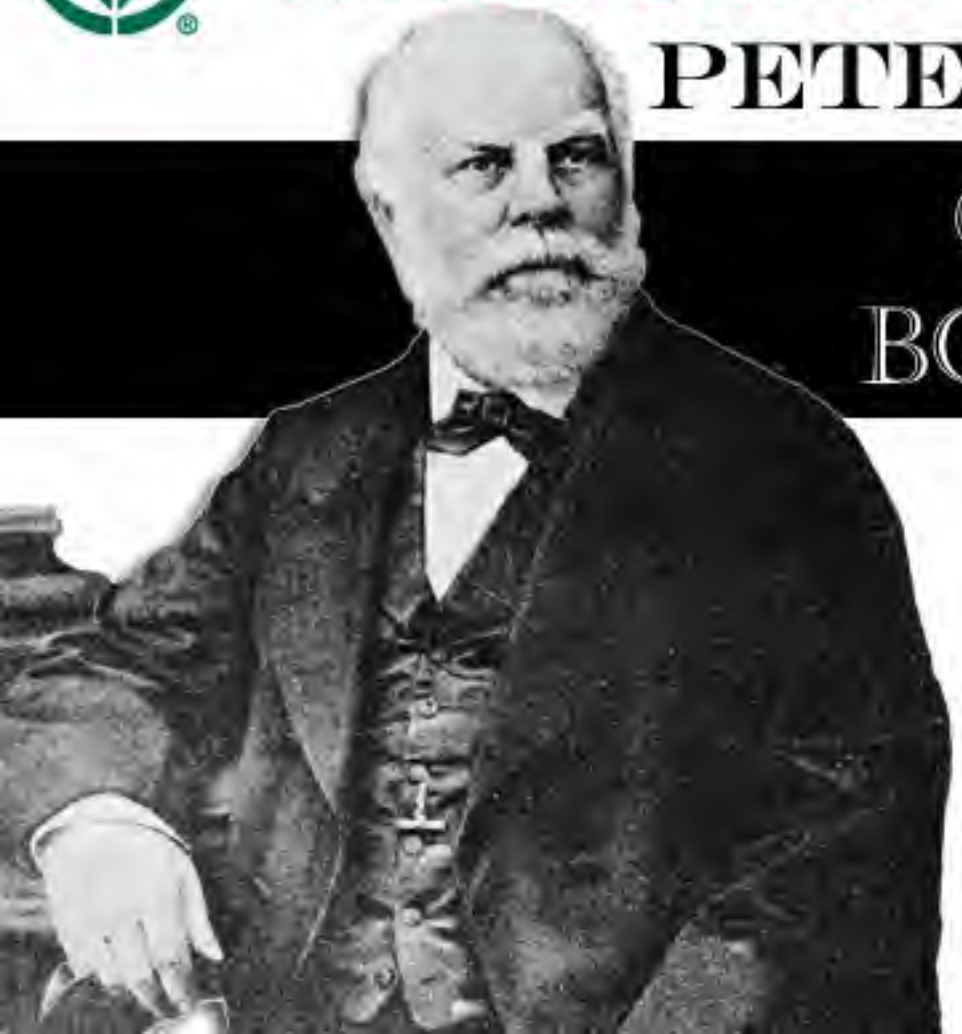

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Dr. Koch presented specimens of quartz and of the silicious conglomerate from Madison County mentioned in Dr. Hilgard's letter.

Dr. Engelmann stated that the mean temperature of July (77.°5) had been lower than the usual mean of that month, and that the fall of rain during the same month (2.04 inches) was about one-half less than usual.

Dr. Wislizenus stated that the mean of atmospheric electricity of July had been 3.5° less than that of the month previous, and that the amount had been gradually decreasing since winter.

August 19, 1861.

The President, Dr. ENGELMANN, in the chair.

Six members present.

A letter was read from A. F. Bandelier, Jr., Highland, Ill., Aug. 1, 1861, communicating meteorological observations at Highland.

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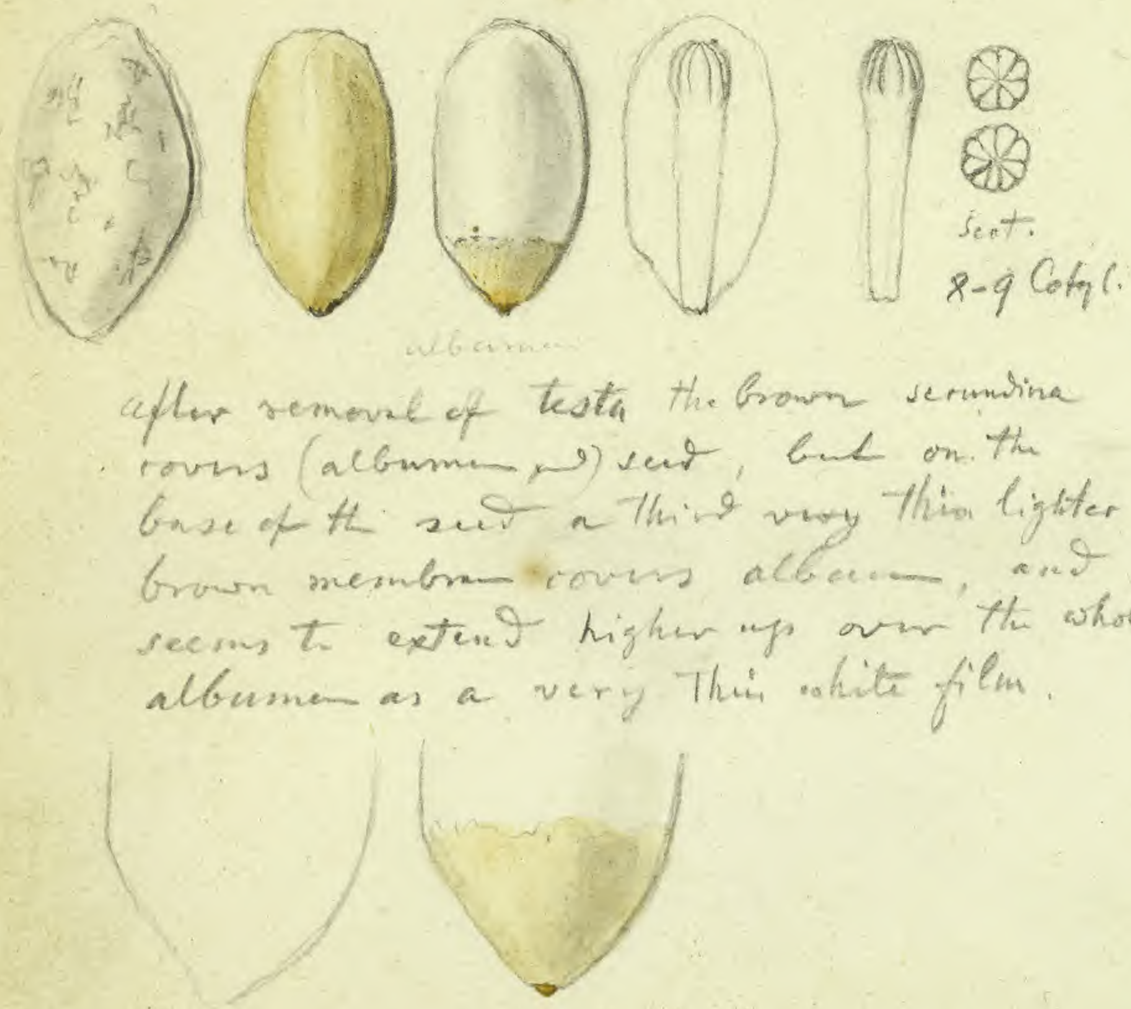
Pinus Strobus
Veriére

St Louis July 16th 1862

× 4.



after removal of testa the brown secundina covers (albumen and) seed, but on the base of the seed a third very thin lighter brown membran covers albumen, and seems to extend higher up over the whole albumen as a very Thin white film.

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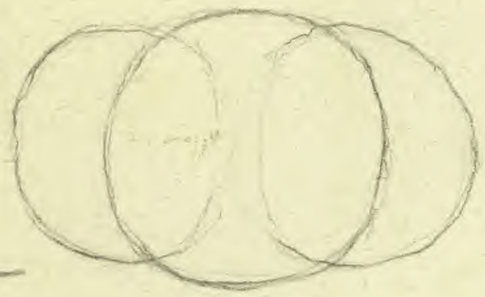
June 1863

Pinus Sabina
H.B. Cambridge



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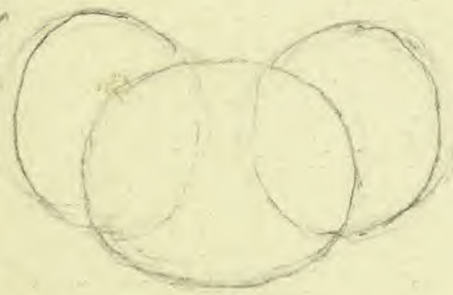

×436
0.036

Anthers not yet open
Pollen grains unripe,
transparent, showing
the 3 cells very
plainly

Pollen de Christiana Pa
0.033 - 0.036 - 0.039

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May 1st '78

P. Balfouriana x P. aristata under both glass
in Leaf

P. flexilis x albicaulis ditto

Leaf of 1st 2 ducts and dark ~~green~~ stripes outside
(Balfour) corresponding with them on back of leaf
~~together, doubly the back~~
~~back in 3 equal~~ as far apart
as from the edge of leaf

ducts surrounded by hypoderm

Leaf of 2d-
(flexilis)

ducts often only 1, but when 2, they
are much further distant from one
another than from edge of leaf -

ducts without hypoderm usually

St. Louis, Jan 1st 187 8

to Dr. Geo. Engelmann,

Jan & April to date, $ 8.00

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P. flexilis

Brewer: replaces albicaulis in the southern tier, south of San Joaquin head waters. Hoffman found it on the next range east the Inyo mountains. It probably runs across southern Nevada. It is a larger tree and descends lower on the mountains,

On the Sierras 60' high. 3-5 feet DB mixed with albicaulis,

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mir heute Abend mit
mir Consultation ga-
stiren bei Herrn
Fr. Griesedieck,
N.W. Cor. Dixon Str. & Clay Avenue?

Bitte bestimmen
Sie die Zeit, und
geben Sie mir Ant-
wort durch meinen
Boten

Ihr
W. Baumgarten

S. G Lemmon, July 21 1879 writes:

On Shasta Pinus albicaulis

- and no flexilis

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On Eddy (Scott) mountain to the west is a grove of thousands of acres of Pinus flexilis with albicaulis surmounting it on the peaks.

albicaulis ? Balfouriana.

Where is Balfouriana ?

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Azoic regions.

Besides these boulders there are innumerable scratchings, ploughings, and
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REVIEWS AND LITERARY NOTICES.

CLIMATE AND TIME IN THEIR GEOLOGICAL RELATIONS.—A theory of secular changes of the earth's climate; by James Crall, of Her Majesty's Geological Survey of Scotland. D. Appleton & Co., N. Y.

Scattered all over our country, from the higher latitudes to the 40th parallel, are huge erratic blocks of massive grantite. These appear on the surface and all through the drift. They were transported from the North—from the Azoic axis—to the regions where they now repose. We know that the erratic foreigners were transported from northern regions, (1,) because they are not indigeneous, (2,) because enormous bluffs of granite rock—such, for instance, as Huronian Hills and Laurentian Mountains—are exposed in these regions and nowhere else; and (3,) because these granite erratics have been traced by scientific men to these Azoic regions.

Besides these boulders there are innumerable scratchings, ploughings, and groovings, traversing our country in systems; the scratches and grooves of any given system are always parallel. Systems sometimes cross each other, producing a confusion of scratchings and groovings. And the surface of the rocks are frequently planed perfectly smooth.

The question respecting the power which transported these boulders and planed, grooved, and striated the rocks, (it has been the unquestioned belief of all persons qualified for an enlightened opinion upon the subject, that the presence of both these phenomena are owing to the same great cause) has ever been a much vexed, and is still an unsettled one. It has been suggested that these erratic boulders were swept down from higher latitudes by the impetuosity of a mad torrent; and that the transportation of these immense masses of rock in this manner produced the planings and groovings mentioned. It being difficult to conceive of a torrent of sufficient force to transport a mass of granite weighing hundreds of tons, the theory has long since been abandoned. But granting that sufficient power does reside in a given current or torrent to transport said boulders, this power would not be a cause adequate to the production of the planings and parallel ploughing, grooving, and striation spoken of; for, though the transported boulders might plane, plough, and groove the underlying rocks, inasmuch as there would be nothing to retain these masses of rock in a uniform and steady course, the scratchings and groovings, instead of presenting the uniformity we behold, would be entirely devoid of system or symmetry.

Since it has been demonstrated to be utterly impossible for the masses of rocks to be transported by water alone, a theory known as the "iceberg theory" has been advanced. This theory supposes that these erratics were frozen into the ice, and the ice floating into southern regions, melting, dropped them wherever we find them. Granting the *possibility* of *transporting* the rocks in this manner, the other phoenomena spoken of is not accounted for; because frozen in icebergs which were driven about at random by the currents, or by the winds, the scratches

11532

and striations would present the same confused appearance spoken of before. The theory most satisfactory, and the one which has been universally accepted, is that known as "the glacier theory." This theory supposes that a glacier, continental in extent, once covered the northern portion of our continent; that it formed in the higher latitudes and moved towards the tropics; that it took up and transported in its southern progress large blocks of granite severed from primitive cliffs and hills, and mountains of the north; and that on melting these blocks of rocks were deposited. Granting the existence of such conditions, the scratches and grooves would be parallel—at least all produced by a given continental glacier would be parallel. Granting the glacier, this is all very plausible; but whence came the glacier?

It was originally thought that the conditions requisite for the formation of such continental glaciers as those of which we have spoken, was brought about by a northern elevation; but the idea that this was the sole or principal cause of continental glaciers was never accredited by many geologists, and was long since abandoned entirely. After the overthrow of this theory, it was suggested that the requisite conditions might be produced by secular changes in the obliquity of the earth's ecliptic. This theory received the support of the most advanced thinkers of the day, for a season, but eventually went the way of its predecessors. It is now maintained that the requisite conditions are produced by the variations of the eccentricity of the earth's orbit. When the northern hemisphere has its winter solstice in aphelion, during a cycle of extreme eccentricity, the sun will be 14,212,700 miles farther away than when the winter solstice of the same hemispheres occurred in perihelion during a cycle of extreme eccentricity. Consequently, when this hemisphere has its winter in perihelion during the time of maximum eccentricity, the amount of glaciation must be far less than when it has its winter in aphelion during the same maximum eccentricity.

The investigations of Herschel, Humboldt, Arago, Lyell, and others came near overthrowing this theory by demonstrating that neither increase or dimnution of the earth's eccentricity, could influence to any great extent the amount of heat received by the two hemispheres,. But our author has redeemed the theory by showing satisfactorily that a considerable increase of the earth's eccentricity beyond that which it has at present, would so modify the currents of the ocean as to greatly increase the amount of snow and ice in the northern hemisphere, and diminish proportionately the amount in the southern hemisphere. Not only this, but he has also established the periodicity of the recurrence of a glacial epoch. His work is a contribution of permanent value to geological science.

PRINCIPIA, OR BASIS OF SOCIAL SCIENCE.—By R. G. Wright, second edition, Lippincott & Co., Philadelphia, 1876.

This is the unsuccessful attempt of a thinker unquestionably of ability to construct a system of social science which shall embody fundamental principles of universal application, a thing as visionary as Plato's "Republic," as improbable as Swift's "Lillypute," and as impossible as Mare's "Utopia."

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Pinus Cembra Imma 1864

Pollen of old deflorate amenta from Canis Cassan
or incompete anthers ×415

best grains 0.036 – 0,038 lines
one grain 0,043 lines, perhaps
not belonging here

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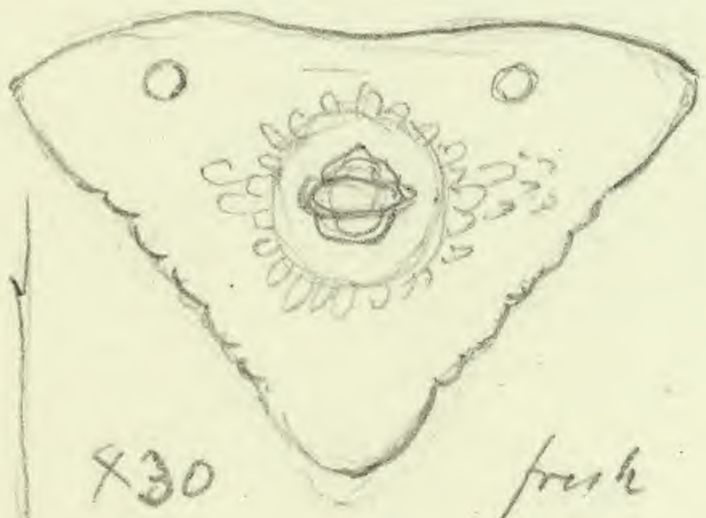
Pium Cembra
H. B. Mss

Sept 27 1862



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fruit

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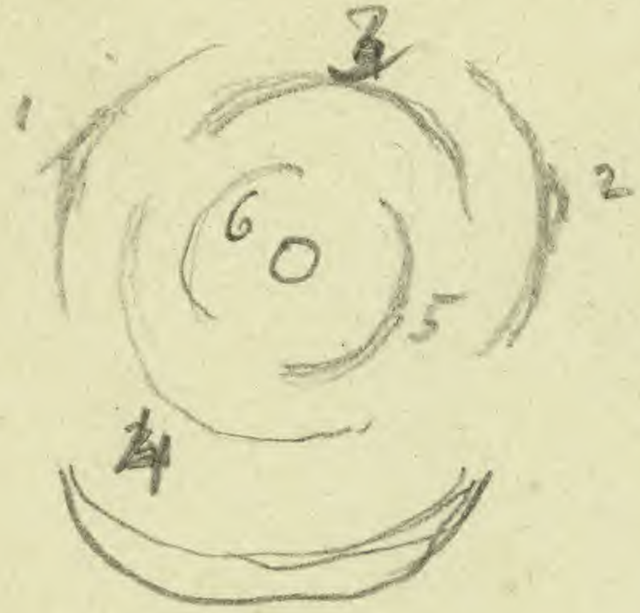
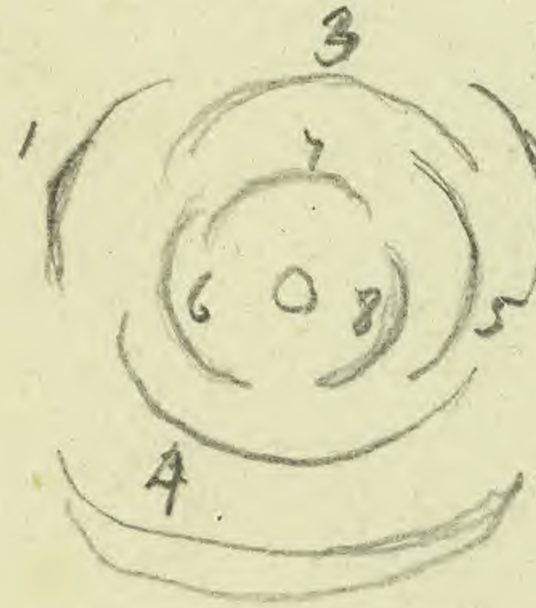
Pinus Ceembra

H.B. Carey

June 1863



Involucrum of male amont 6-8 bract, differently arranged



all correct ? no ;

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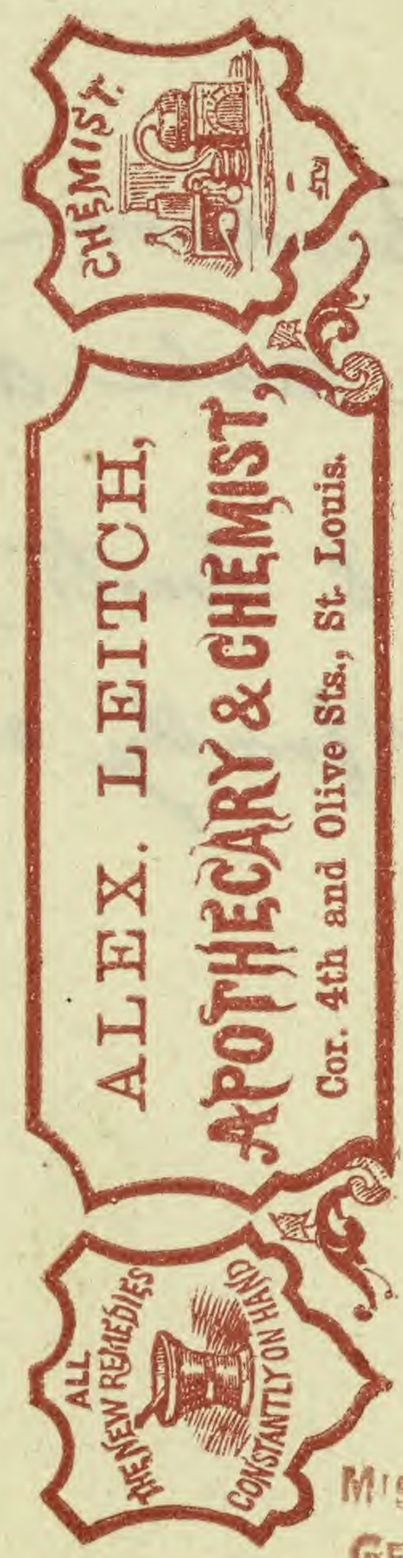

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My P. strobiformis = P. Ayacahuite
Ehrenb.

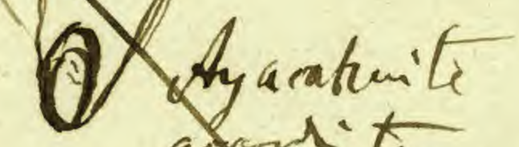
Linn. XII. 492

Loud. Encycl of trees p. 1919–1921

leaves 4–5 inches long, glaucid, acerulate
(my 3–3½", straight)

Cone dense size 2"
wing 1" long 5 lines wide

my strobiformis



Ayacahuite according to description

Cones 8–14" long
scales 2" long (apophys
seed 2"' long wg 12"' long 5"' wide

Each
8–10 lin)

Linn XII. 492 & Encl
Cat descr.

Cone evidently similar to ours, but
seeds very different.

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Agrostis hirta Tip plant sometimes

Mitlan. Chromby 647 yong dark violet, old flows culm
Guatemala Salvin & Godm — dark violet
nearly entire
P. Bonaparte " "
P. Don Pedro.
Chromby 645 —
Wis Gijon entire
Colombia dark violet

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Blood stains examined after a fall in 1870 gave clay, chalky sand, peroxide of hydrate of iron, nitrogenised sodium, silica and organic matter. This was traced to its origin, the Sahara Desert, in Africa, from whence the wind was blowing. All the above facts prove that the so called showers of blood are a reality, and that they are mostly due to dust taken up by the wind and carried to very distant regions, and that they are not unfrequent.

Another cause is the ashes from volcanoes which are sometimes carried to immense distances.

Another series of remarkable showers are noticed in ancient legends, exaggerated and interpeted in various ways.

Showers of milk are spoken of as having taken place. Thus, in 620, streams of milk are said to have flowed into a Roman lake. Obsequens relates that a shower of milk and oil fell upon Veies in 629. These so called milk streams are common occurrences in many districts, and are occasioned by the flow of water over a white soil, or the washing of rain upon such soils. The fall of ashes of a volcano or the carrying into the air of white or chalky earth by hurricanes, will also account for the supposed showers of milk.

Many authenic accounts are given of the appearance of crosses upon men's clothing. In 764 the misbehavior of the monks of St. Martin drew down the anger of God, blood fell from the heavens on the earth, and crosses appeared upon men's garments.—*Gregory of Tours.* In 1094 crosses fell from the sky upon the garments [illegible] thing happened in 1534 in [illegible]

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species of butterfly, these insects alighting in great numbers produced the supposed blood stains by their excrements.

But in the great majority of instances these apparent showers of blood are produced by the wind taking up great quantities of fine red earth and sand, which, falling with the rain, produces the viscous, blood-red stains, which have caused such terror and fright in past ages.

On March 14, 1813, one of these strange and appaling red showers fell in the kingdom of Naples: "An east wind had been blowing for two days, when the inhabitants of Greece noticed a dense cloud moving towards the sea, at 2 P. M. the sea became calm, but the cloud already covered the neighboring mountains and began to intercept the light of the sun. Its color originally a pale red, soon became deep as fire. The town was then plunged into such profound darkness that, about 4 P. M., it was necessary to light candles in the houses. The inhabitants, alarmed by the obscurity and the color of the cloud, rushed in crowds to the cathedral to pray. The obscurity increased, and *the whole sky seemed red as fire;* thunder began to growl; and the sea, though six miles distant, added to the general alarm by the roar of its waves. There then began to fall large drops of redish rain, which many persons took for blood, and others for fire; at last as night advanced, the air became clear, the thunder and lightning ceased, and the inhabitants regai[illegible]

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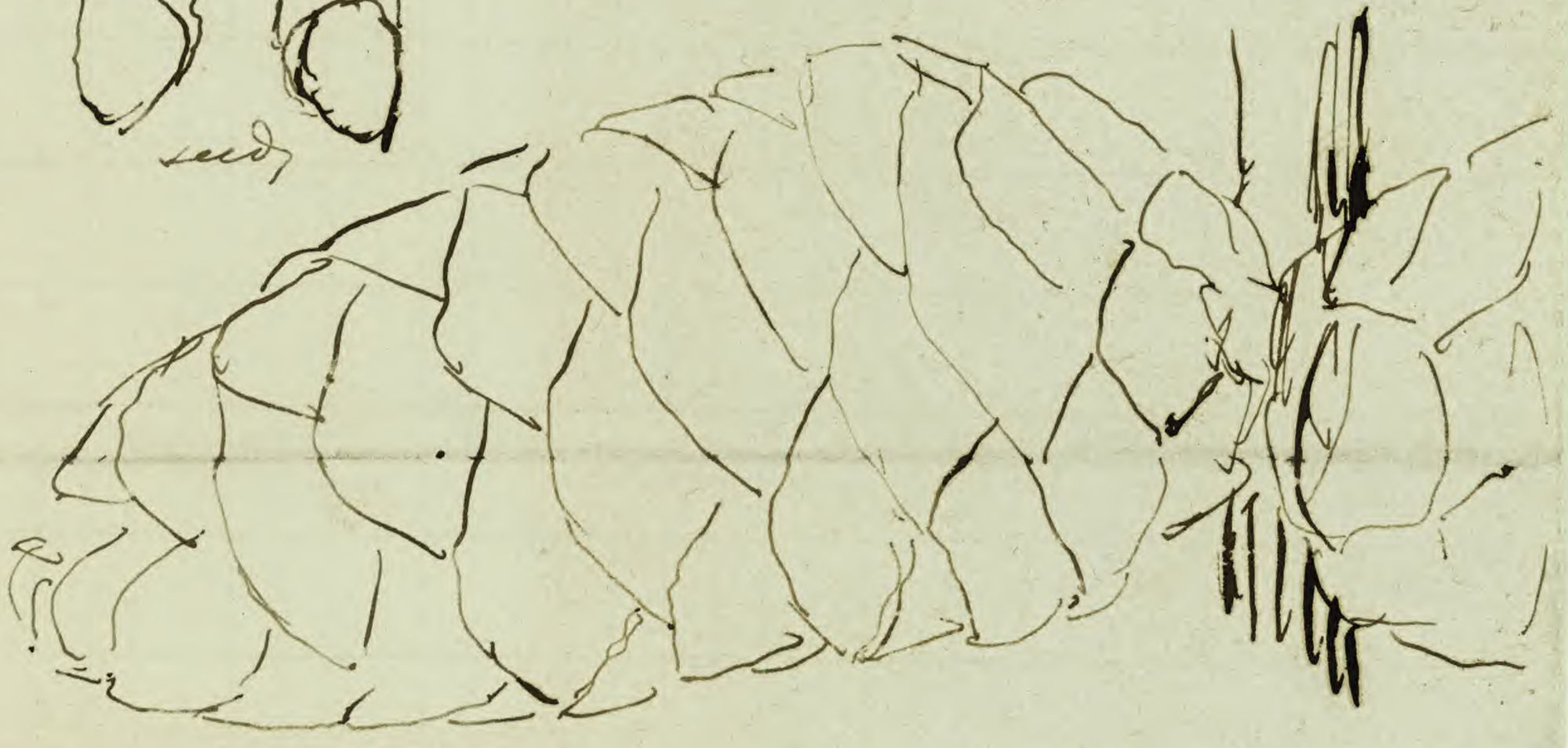
Pinus parviflora Sieb & Zucc.
anther
N. Jap. 2. 27.
1862
cf. Murray Conif. Japan. 1863 p. 11
seed



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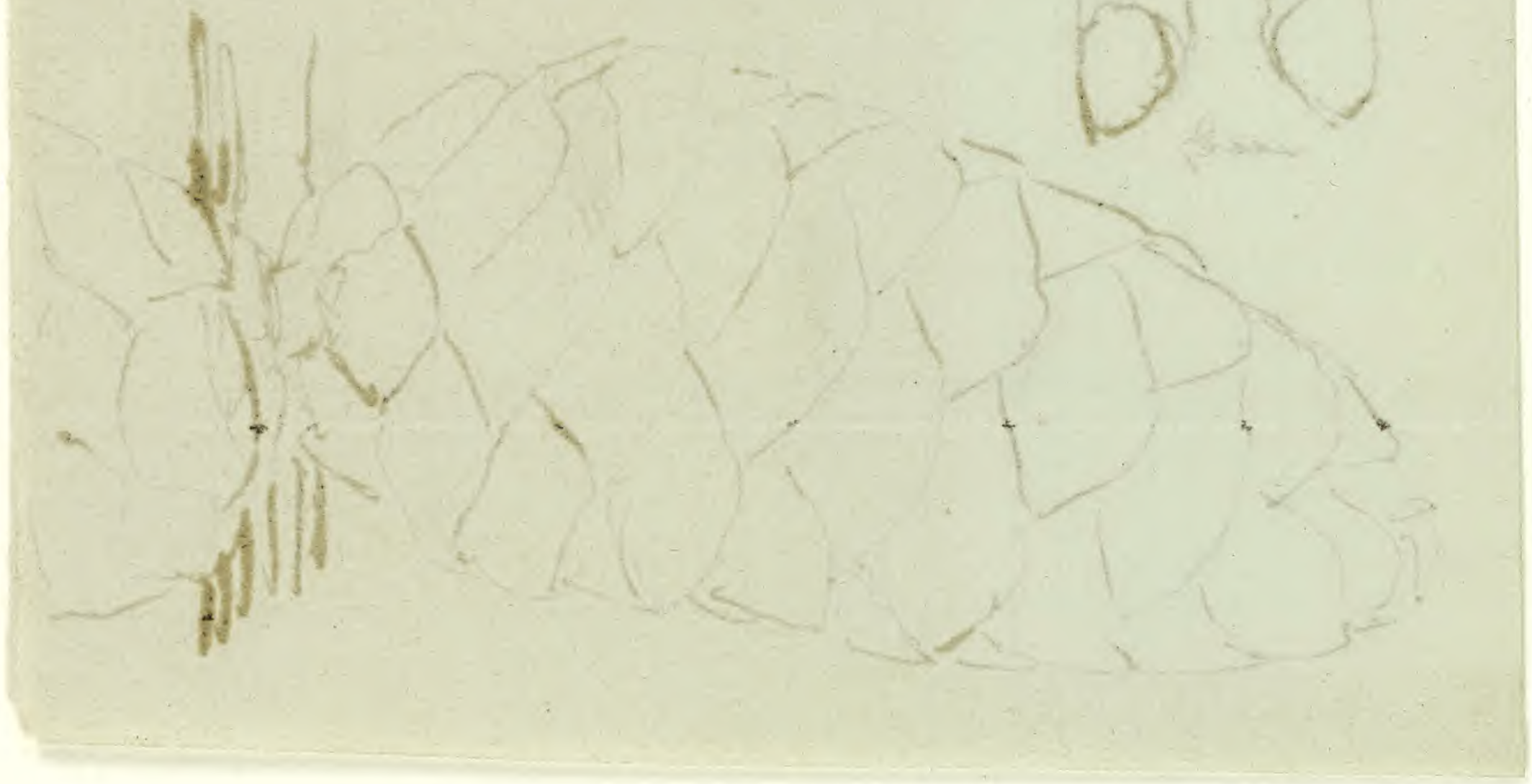

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